The use of GIS in establishing a trail inventory and trail-monitoring sustainability indicators

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Outline of Presentation

- Introduction
- Methodology
- Checklist Survey Results
- Nodes, Links and Access
- Discussion and Conclusions

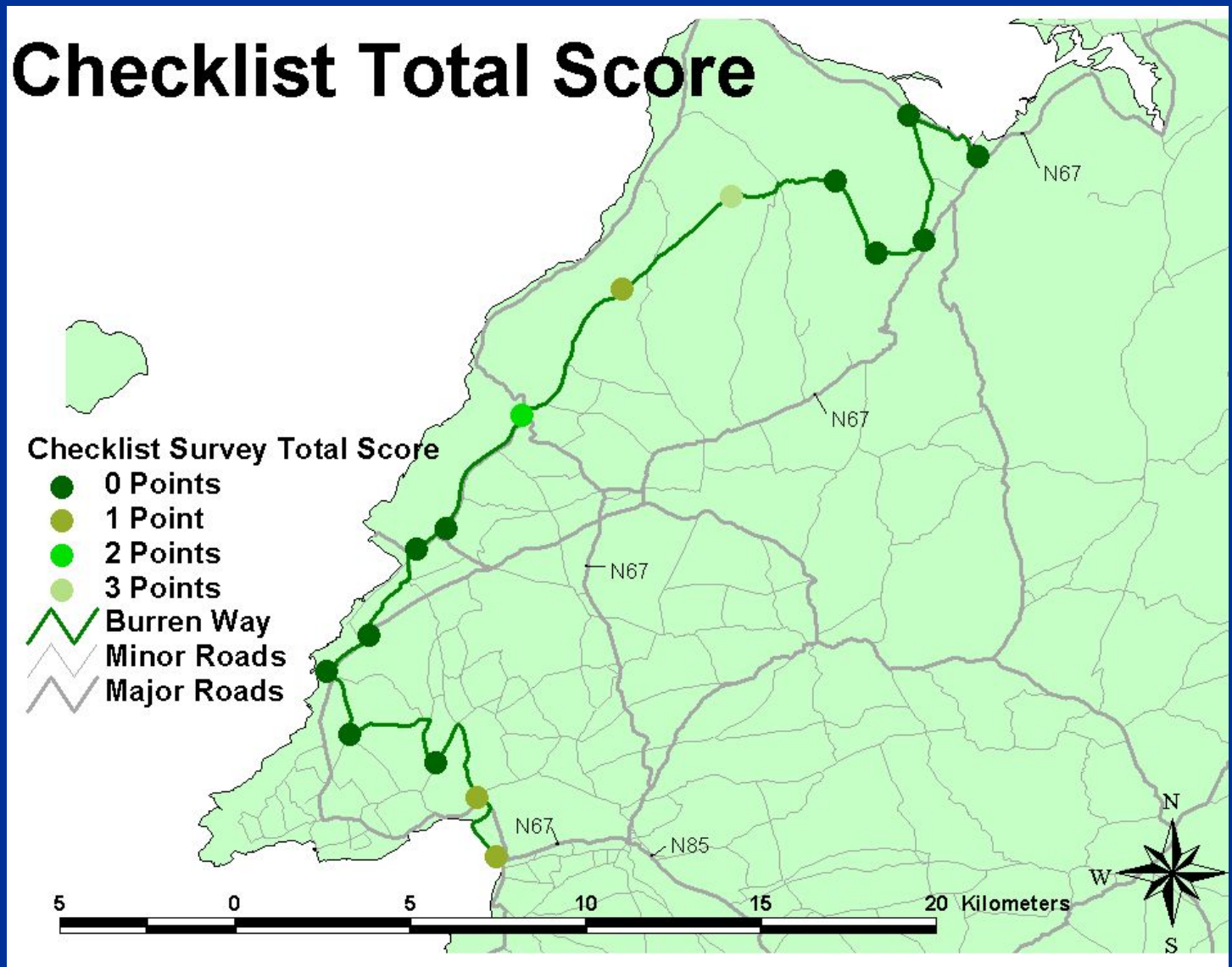
Introduction

- Data available: Sources and Formats
- Uses of GIS
- Current management practices in Ireland
- Study sites
- The need for indicators

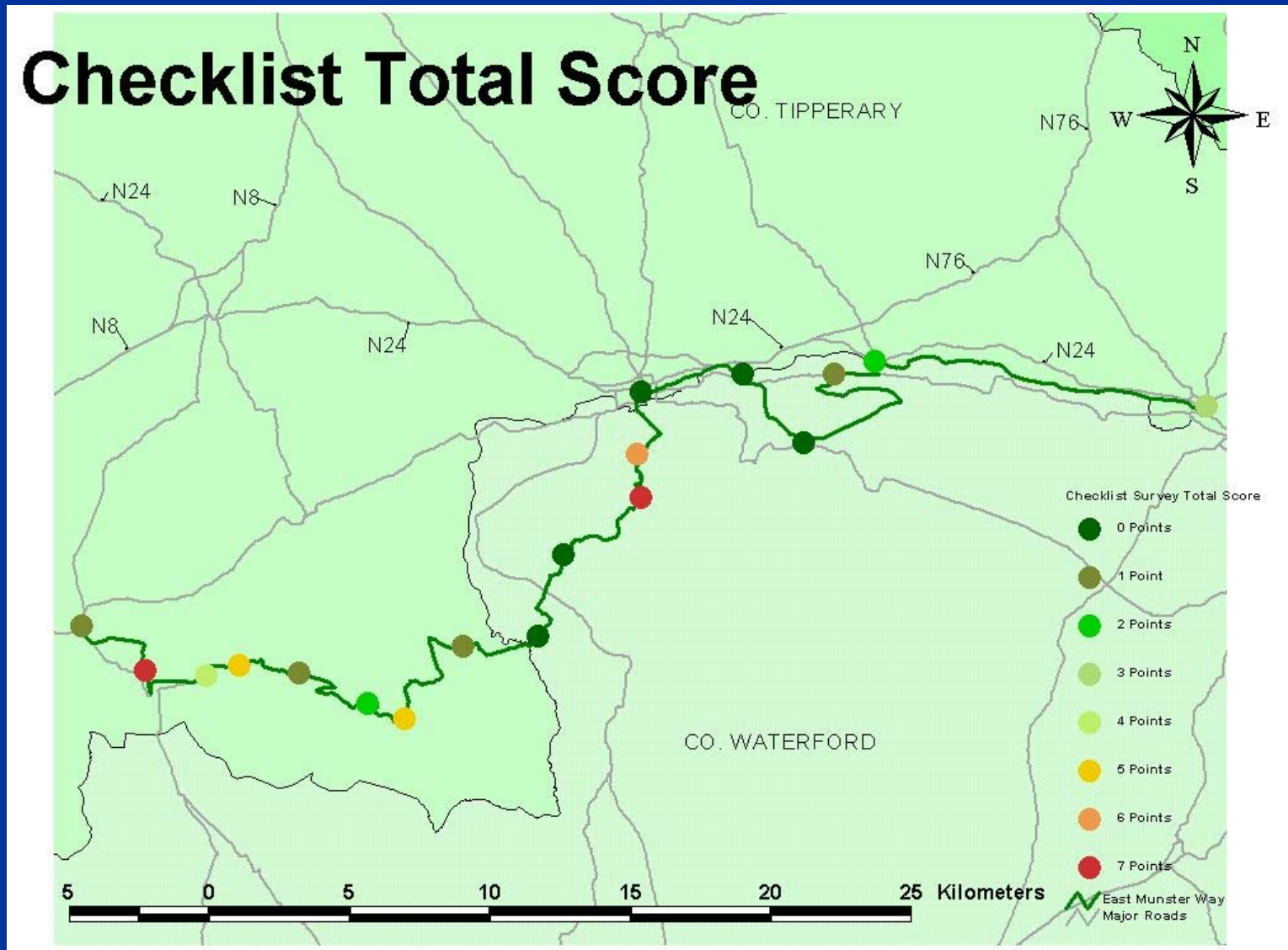
Checklist Survey Indicators - Major Component of Methodology

- Graffiti
- Trail braiding
- Obstacles in path
- Evidence of picnicking
- Litter
- Damage to vegetation
- Invasive vegetation
- Clarity of signposting
- Drainage
- Condition of stiles
- Erosion
- Native tree planting
- Soil compaction
- Gullying
- Trampling
- Safety

Checklist Survey Results - The Burren Way

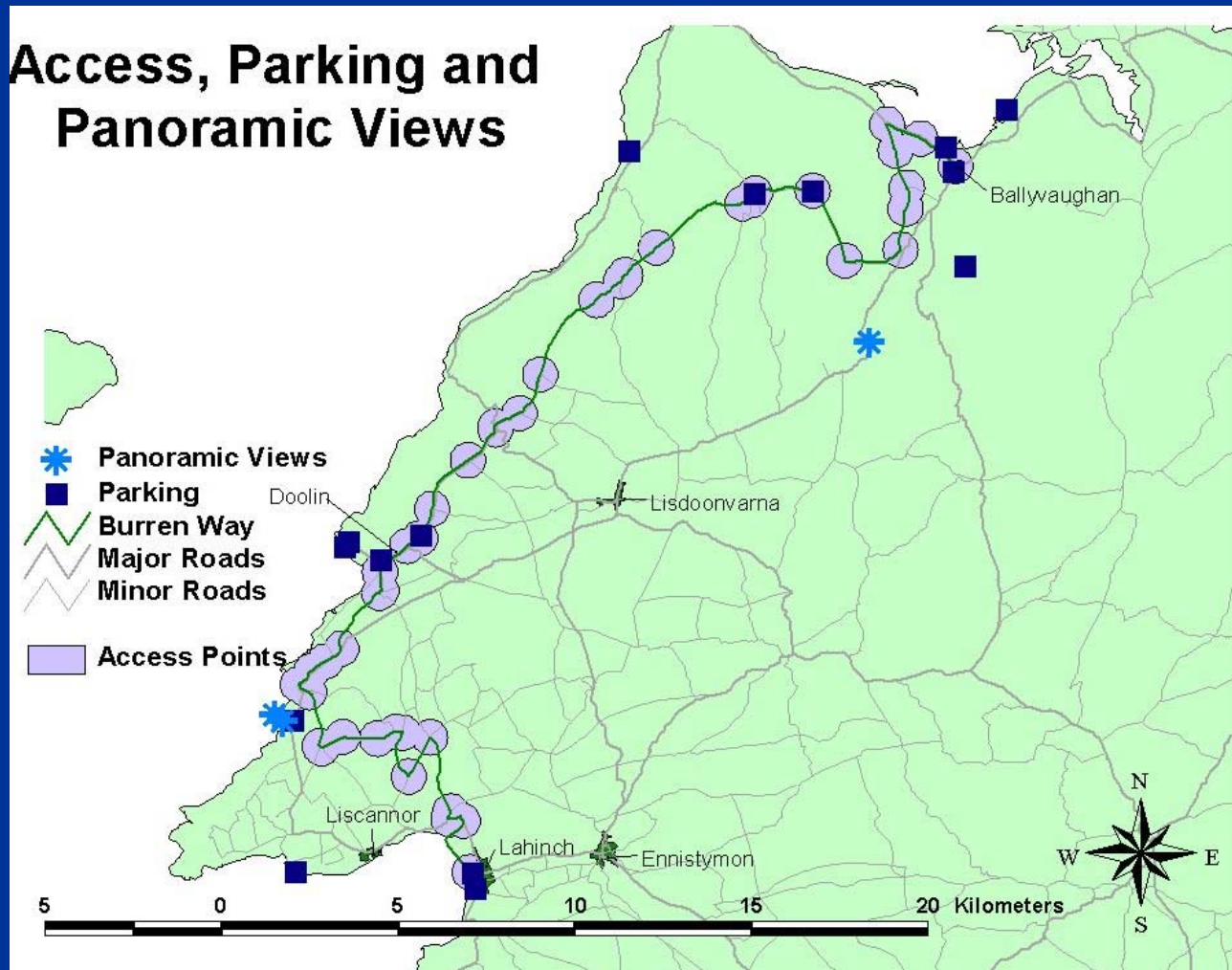


Checklist Survey Results - The East Munster Way

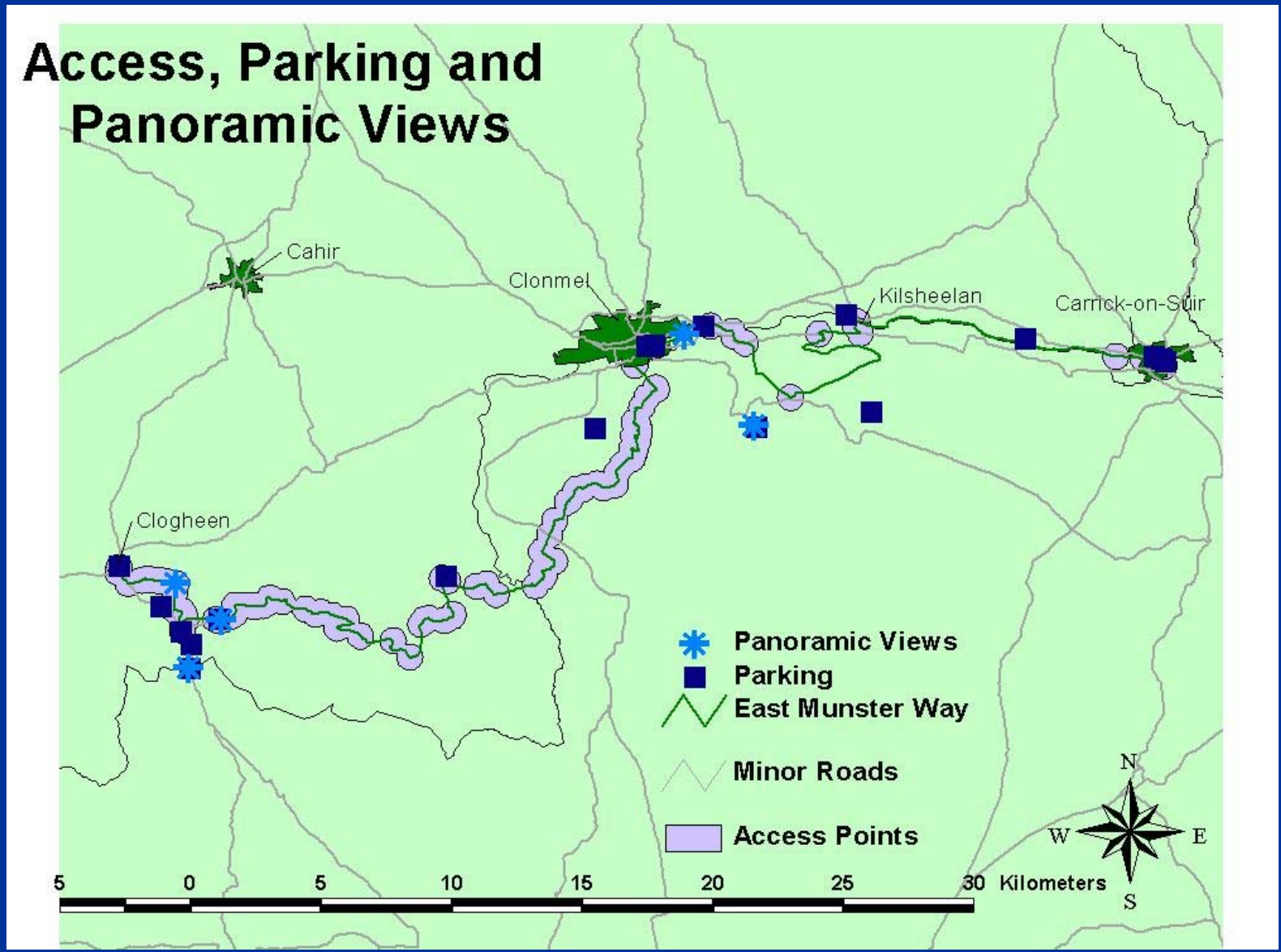


Methodology Part II - The Burren Way

- Access
- Route Inventory
- GIS analyses



The East Munster Way



Nodes and Links - Alpha Index

α = L-V+1/ 2V-5

Where α is the index of network circuitry, L is the number of links on the route and V is the number of nodes.

- Burren Way α= 53-(47+1)/ (2 x 47)-5
  = 5/89 = **0.06**
- East Munster Way α= 127-(90+1)/ (2 x 90)-5
  = 36/175 = **0.21**

Nodes and Links - Gamma Index

γ = L/ 3(V-2)

The term 3(V-2) represents the theoretical maximum number of linkages possible on a route with a given number of nodes.

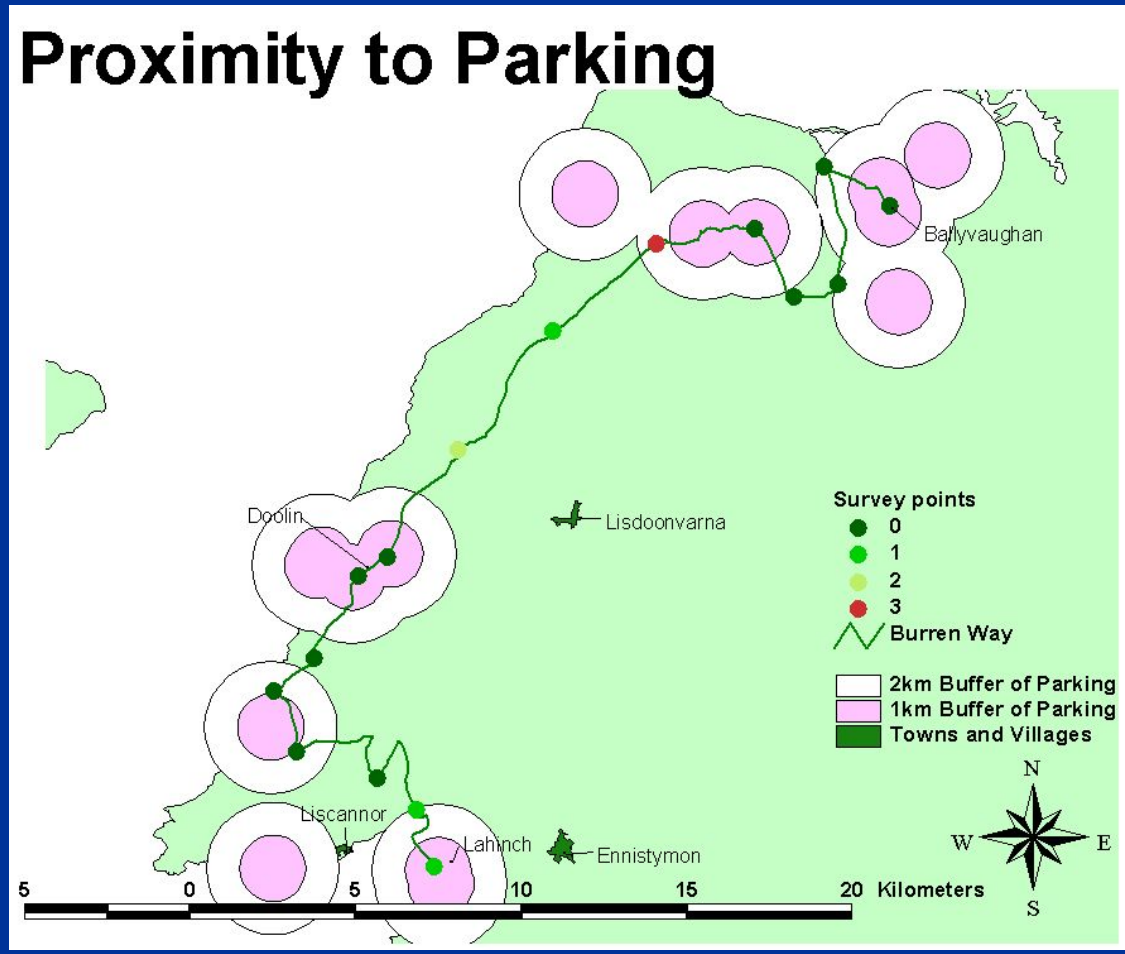
- Burren Way γ = 53/ 3x(47-2) = **0.39**
- East Munster Way γ = 127/ 3x(90-2) = **0.48**

Nodes and Links : Totals and Means

	Burren Way	*East Munster Way*
Nodes per km	1.04	1.29
Links per Node	1.13	1.41
Links per km	1.18	1.81
N road links	0.13	0
R Road links	0.71	0.79
Track links	0.33	1.03

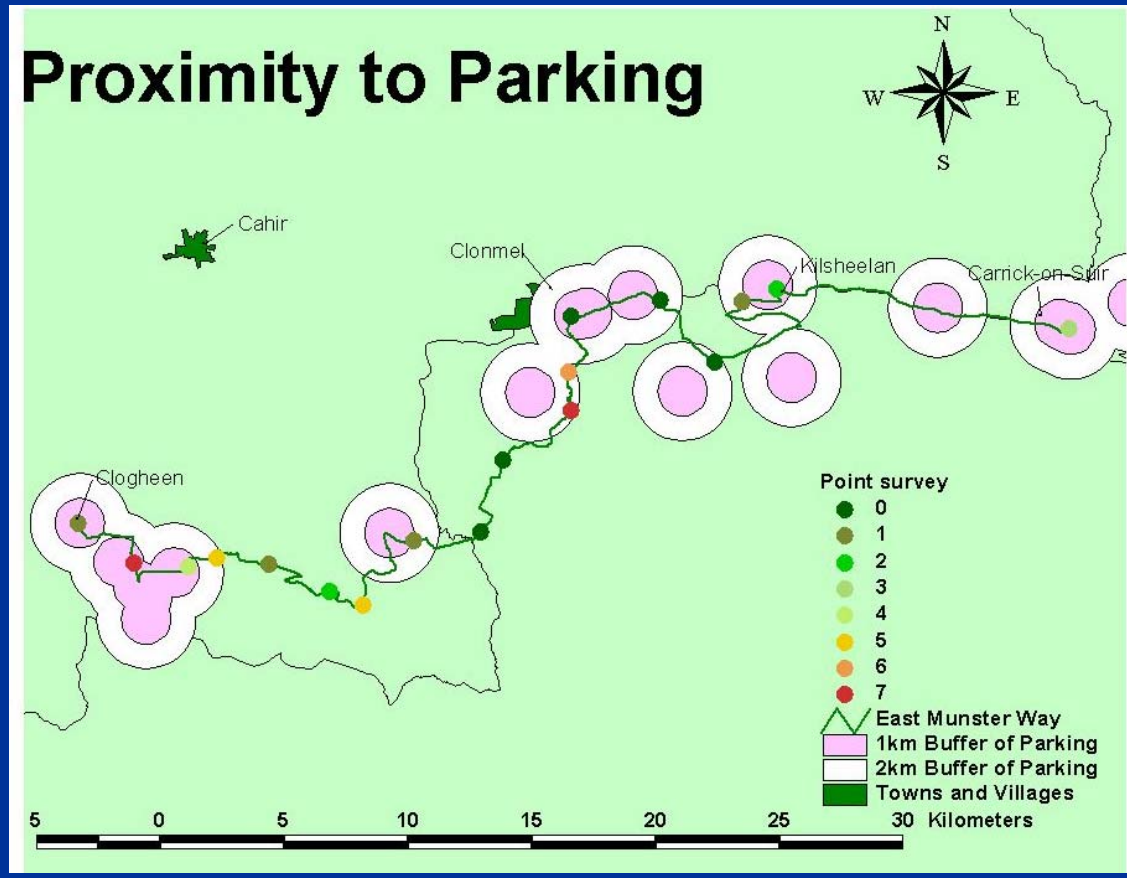
Analysis of Burren Way

- Mean score within 2km of parking **0.45**
- Mean score within 1km of parking **0.2**
- Mean score outwith 2km buffer **0.6**
- Mean score outwith 1km buffer **0.64**



Analysis of East Munster Way

- Mean score within 2km of parking **2.85**
- Mean score within 1km of parking **2.83**
- Mean score outwith 2km buffer **1.6**
- Mean score outwith 1km buffer **2.33**



Discussion of Results and Conclusions

- Describing the landscape
- Current and future uses of the selected methods
- Value of the techniques used
- What next?